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News

SIGNAL ACTIVITY OFFERS GLIMPSE INTO FUTURE OF INFORMATION TECHNOLOGY

by SFC Jim Ward

Headquarters, U.S. Southern Command, Miami, Fla. — For the 700 people who make up the joint-service U.S. Southern Command, the future has arrived. That's because they've already begun work in the ultramodern facility that's now their headquarters.

This move took place in late September 1997. Army Signal Command's Signal Activity-Southern Command will now provide the finest in command, control, communications, computers and intelligence systems support in a building that's clearly up to the challenge. All this because of a two-year effort ASC spearheaded.

The building itself is surrounded by others in what's called an "industrial park" in Dade County, Miami. Its impressive facade offers a vision of power and efficiency that's the vanguard of the next century's military.

What makes it more impressive is the variety of information systems that bring the best in C4I to a command whose mission is as diverse as any in the military. In fact, it's because of this mission, which includes an area spanning the length of South and Central America and most of the Caribbean, that so much of the infrastructure has been installed.

This process began more than two years ago, when then-Information Systems Command accepted the daunting task of transferring the full spectrum of C4I from Quarry Heights, Panama, to a site in the Miami area. At ISC's direction, Information Systems Engineering Command and Information Systems Management Activity came on board.

The array of state-of-the-art information technology is staggering. From the multilayered local-area networks to the visual-information platform to a robust collection of matrix switches, the 160,000-square-foot building provides SOUTHCOM staff with the kinds of systems that will link them to soldiers in the field on one end and the national command authority on the other.

These systems have been designed to operate in concert with each other — with the end-user, or customer, in mind.

According to Al Rivera, the project's senior systems engineer, the installation staff has built in enough redundancy the four-star SOUTHCOM headquarters can operate seamless communications now and into the future.

"We've created a customer-responsive infrastructure of $20 million that will provide flexibility and growth on demand," Rivera said.

Conference facilities in the building are linked together, while local-area networks are carried on Category 5 and fiber-optic cable that speed information from matrix switches controlling each of the three networks to end-users in the blink of an eye.

"These ultrafast systems will give staffers the kind of connectivity critical in the fast-paced information environment the defense establishment will live in as the next century begins," Rivera said.

Adding even more robustness to the conduct of information operations are "pipelines" that will create the kind of information throughput the military has come to require — and expect.

"We know potential enemies have high-speed communications capabilities, so it was up to us to go one better," Rivera said. "The bandwidth we've installed and ASA will manage will more than handle whatever is thrown at it."

Despite its inherent value, the equipment alone can't get the job done. That's where the ASA staff comes into play. This skilled group of top-notch communications specialists are among the sharpest in the world and can't wait to get down to the business of supporting SOUTHCOM.

"My soldiers and civilians are up to the task of managing such a futuristic system. They understand this strategically important headquarters' needs and bring years of on-the-ground experience to this task," said LTC Jorge Madera, ASA's commander.

Whether the commander-in-chief and his staff need electronic mail or are out in the jungles of South America, they can have the confidence the information system installed and operated by Army Signal people will provide the communications advantage they'll need.

SFC Ward is assigned to Army Signal Command's public-affairs office at Fort Huachuca, Ariz.

TACTICAL SATELLITE TERMINAL BRINGS LONG-DISTANCE CAPABILITY

by Kap Kim

FORT HOOD, Texas — With the start of the Force XXI division advanced warfighting experiment early in November 1997 here, one more modern piece of communications equipment was introduced to soldiers.

The MST-20 single-channel satellite system allows commanders to channel the flow of information from extended distances. Some seven units have been fielded.

SFC Cordell Harp, 4th Infantry Division's frequency manager, and SPC John Arp, a radio/telephone operator, set up the MST-20 SCSS for the division's use during the DAWE exercise Nov. 5-13, 1997.

According to Harp, the MST-20 SCSS is designed to send encrypted communications, which are fed through satellites, over long distances

— longer than the range of the mobile-subscriber equipment the Army now uses.

"For example, someone from Colorado can make a call to Texas, or from anywhere in the United States," Harp said.

Harp said it isn't a new piece of equipment to the Army, and it wasn't brought out to the AWE for "just another tool used for talking, and practice for the soldiers."

"If normal communications goes down, commanders will have the option of using this," Harp said. "We're bringing it out here for soldiers to train on, because they will use them when we have deployments."

The MST-20 SCSS can be either fixed or mobile, according to Arp. When at a fixed base, the receiver and encrypter portion of the system, or KY-99, runs off continuous power. As a mobile unit, batteries power it.

Kim is assigned to 13th Public Affairs Detachment, 4th Infantry Division, Fort Hood.

TOBYHANNA TRAINING SITE EXCELS IN MEETING SOLDIERS' NEEDS

TOBYHANNA ARMY DEPOT, Pa. — A newly formed battalion from Rhode Island selected Tobyhanna Army Depot's High Tech Regional Training Site to meet its requirements for its first annual training as a unit.

Members of 3d Battalion (Signal Corps), 98th Regiment, Providence, R.I., recognized Tobyhanna as the only installation with the capabilities to support its training needs, explained reserve-component training coordinator Fred Eckelmann.

"The training was equipment-intensive, hands-on training which required the capabilities of both the High Tech Regional Training Site and the installation," said Eckelmann. "Tobyhanna Army Depot, being the largest full-service communications-electronics maintenance facility in the Defense Department, and having the High Tech Regional Training Site-Maintenance colocated, gives us the capability to support high-tech equipment needs."

Ninety soldiers from the United States and Italy participated in the training.

Soldiers received military-occupation-specialty-qualified training for single-channel radio operator, wire-systems installer and Signal-support-systems specialist.

For more information about training opportunities and courses offered at Tobyhanna Army Depot, contact Eckelmann at DSN 795-7712.

TEAM PROVIDES COMMANDER WITH ON-THE-GROUND EYES

by SFC Jim Ward

FORT HUACHUCA, Ariz. — As Army Signal Command continues to wrestle with central configuration and standardization of information-technology systems, a group of communications specialists is fanning out throughout Forces Command to help.

This group, part of ASC's operations staff called the quality-assurance team, is developing standards for all Army fixed-station satellite-communications facilities.

Heading up this team is CW5 Jack Hrubik, a man who brings some 30 years of command, control, communications and computers experience to this task. Working with him is a team that also has the skill mix needed to hit the ground and quickly assess what's needed to bring the Army's far-flung network of facilities into the next century.

One of these soldiers is SFC Samuel Boyle, who stays in constant contact with commanders, tech controllers and satellite earth-station operators in an effort to help them modernize their operations and get a handle on the ballooning changes in the way the military transmits messages around the world.

"What we do is go out and look at the whole communications support package. This allows us to determine if circuit quality is up to the designed or engineered standard," Boyle said.

If it's not, Boyle and the others work with the people in charge at each site to bring the equipment up to standard.

"We're here to help, not to throw stones," Boyle said.

Right now, Defense Information Systems Agency performs some quality-assurance support, but the ASC QA team wants to take this to a higher level by complementing what DISA is already doing.

"We owe it to the units to be out there helping them keep their systems running as efficiently as possible. That means performing trend analysis and also checking to make sure stations aren't robbing power from some other DISA customer," Boyle said. That's because DISA allots power and it's up to organizations like ASC to monitor its use.

Some of these issues will surface during the unit's annual command inspection, but Boyle is quick to point out that satellite communications are only part of the CIP process. He said that often the full depth of SATCOM issues can't be fully addressed. That's what makes the QA team so important.

Key aspects of the team's visits include a close inspection of the station's equipment reports and the master station logs. These documents speak volumes about the overall health and operation of each station. Boyle pointed out this is already an ongoing process, but with the technology changing so rapidly, it's difficult for stations around the world to keep up. That's why the QA team is in business.

As the QA team continues its visitation program, several trends begin to emerge. Chief among them is the need for standardized training and common standard operating procedures. Boyle said these products will go a long way toward giving commanders what they need to fix problems and work toward the future.

"The station commanders are happy we're available to help them," Boyle said. "I think the team is a very good idea and works well with the Army Configuration Management Office, which is the other half of the process. ACMO determines configuration management; we try to help commanders reach that goal."

Whether you're a station chief or a battalion commander, it's a good bet

the QA team will be in your neighborhood soon.

Commanders can contact Hrubik or his team by calling DSN 879-6293, or by e-mail at hrubikj@huachuca-emh12.army.mil.

SFC Ward is assigned to Army Signal Command's public-affairs office at Fort Huachuca.

TRAINING PREPARES DEPOT FOR NEW WORKLOAD

TOBYHANNA ARMY DEPOT, Pa. – Tobyhanna's High Tech Regional Training Site is training depot employees on the TRC-170 communications system to repair and maintain the system. The added workload is part of the BRAC 95 workload from Sacramento Air Logistics Center, Calif.

"The system's full name is AN/TRC-170 digital troposcatter radio system," said Gene Collarini, senior multichannel communications system instructor. "It provides full duplex transmission and reception of a set of radio-frequency signals through line-of-sight, diffraction or troposcatter propagation modes."

"We're training depot employees in operations and maintenance," Collarini said. "Tobyhanna is the only place on the East Coast that can train others on this system."

Collarini and Bob Caron, a logistics-assistance representative from Communications-Electronics Command, Fort Monmouth, N.J., train employees in a three-week course to learn repairing the system down to the component level.

Figure 33. Bob Caron, CECOM logistics-assistance representative, trains electronics mechanic Anne Dolinsky on TRC-170 communications-systems repair at Tobyhanna Army Depot, Pa.

"We've also trained Marine Corps reservists on the systems, but in a two-week direct-support maintenance course," Collarini said. "They learn how to troubleshoot and replace components rather than repair them."

Students from "Toby Tech" will conduct the next two courses, with the help of instructors from the High Tech Regional Training Site.

NEW TECHNOLOGY, TOOLS AID BATTLEFIELD OPERATIONS

by Socorro Spooner

While the division advanced warfighting experiment was underway at Fort Hood, Texas, early in November 1997, both soldiers and commanders were putting their newly acquired knowledge to use — and were noticing the benefits.

Before the new technology was put into play, commanders and soldiers would run into similar problems on the battlefield that would take hours or even days to fix. Now the answers that are to be executed on the battlefield are all at the touch of the keyboard.

That's what the Force XXI process is all about, as the Army prepares to move into the 21st century with a new emphasis on computers and digitization to enhance communications, situation awareness and fighting capabilities. The DAWE exercise at Fort Hood Nov. 5-13, 1997, was the next step in testing and evaluating some of the new warfighting procedures.

One of many soldiers who has observed this firsthand was SPC Norm Tatro, a maneuver-control system operator with 4th Infantry Division.

"It's harder now to do my job because of the new tools, but I can now get more done," Tatro said.

MCS is replacing the use of mapboards because it gives the battlefield's overall picture to commanders on the computer and allows them to communicate at a faster rate with their troops, said Tatro.

Even though MCS has replaced the mapboard's function, it hasn't completely replaced the mapboard. Mapboards can still be found in the same areas as they were before, but

they are only used as a backup now, Tatro said.

"Before MCS, we used to go from place to place to get information for the mapboards," Tatro said.

Now, with the new system, the information is available at the touch of the keyboard. This gets the information there a lot faster, which allows for quicker decision-making.

"This system will help the soldiers down in the line units the most," said Tatro.

This system will not only help the commanders make the best decision possible, it will make the troops a partner in the fight as it gives them a better understanding of the surrounding battlefield, according to Tatro.

Some other soldiers also benefiting from the new digitized technology are radio operators like SPC Timeon Morgante, Company C, 124th Signal Battalion, who used to be a switch operator and is now using the tactical personnel communication service to do the same job. TPCS helps reroute phone calls which would otherwise have to be fixed manually.

"This system makes troubleshooting easier for me," Morgante said.

It also makes the job easier than it was in the past when it only supported 42 wire lines and no mobile phone lines.

"This system gives me the capability to have 40 wire phones on line and 50 mobile phones on line," Morgante said. "The new system has made my job harder, but I'll benefit in the end."

Even though many soldiers are challenged to learn and use the new digitized technology, soldiers are able to view the overall benefits firsthand. This accounts for the common opinion of becoming a digitized Army, which is "we will be the leaders of the digitized future of the battlefield."

Spooner is assigned to 14th Public Affairs Detachment.

SPIRAL DEVELOPMENT: VITAL TO ARMY'S FUTURE

FORT MONROE, Va. (*Training and Doctrine Command public-affairs office***)** — The army warfighting experiment process has created a devel-

opment method that could result in cutting the time for fielding equipment from seven to 10 years down to two or three.

That process is called spiral development, and it's a partnership between Army development and acquisition agencies, contractors and soldiers.

"When you say spiral development, you're talking more than just hardware and software," said COL Joe Leigh, commander of the digital-force coordination cell at Fort Hood, Texas. "You're talking about the development of hardware, software, training, leader development, TTP (tactics, techniques and procedures) development and, to some degree, doctrinal development. That spiral development is very powerful."

When a concept or design is generated by one part of the partnership, it's studied and used by other members. Through feedback from the entire partnership, the concept or equipment is improved.

The alternative to spiral development is to continue equipment development in its current linear, step-by-step method, according to GEN William Hartzog, commander of Training and Doctrine Command.

Hartzog uses the Javelin anti-tank system as an example of the linear process. The shoulder-fired weapon was conceived in 1987 but was issued to soldiers in the Force XXI task force just this year.

The holistic aspects of spiral development are what has enabled the Army to make such rapid progress in the Force XXI process, Hartzog said.

In 1995, 4th Infantry Division at Fort Hood became the Army's experimental force and its 1st Brigade became the Force XXI task force. At the same time, technical representatives from 40 companies moved to Fort Hood to develop and monitor how their products were used. Army system program managers also set up shop at Fort Hood.

"They were with us for two years, helping us build the task force, helping us test things, experiment with things," Hartzog said. "Rather than go with a linear process of having a con-cept, building one of something, trying it out, building a few more and all of the different things that you go through with a seven-year or eight-year development cycle, we put all of that into a holistic two-year process."

At the center of the spiral development process are soldiers. They provided immediate feedback to on-site contractors about how new digital communications equipment and weapons systems worked, or should work.

Doctrine and TTP developers observed soldiers and leaders while they learned to use the new equipment and capabilities during platoon and company-level training exercises.

"The quality of the doctrine that was written was directly proportional to the time that the doctrine writers had spent with the unit on the ground," Hartzog said.

There were also battlefield realities that weren't learned until 1st Brigade deployed to the National Training Center in March 1997 to engage the opposing force in the Task Force XXI AWE. One of those involved unmanned aerial vehicles.

In trials leading up to the Task Force XXI AWE, UAVs delivered clear views of the battlefield to ground maneuver commanders. However, the March experiment revealed the UAV could only get clear pictures from a maximum altitude of about 6,000 feet. They were "shot" down by the OPFOR.

That problem was solved by a soldier who suggested putting two lenses together to extend the range of the UAV to a safer altitude of 12,000 feet.

"The contractor was right at his elbow and the scientist was right at the contractor's elbow, and within 24 hours we had a 12,000-foot focal length," Hartzog said.

Contractors may be present on future battlefields, too, the general said.

"Why? Well, the kind of person who came out to service the prototype (at NTC) had 25 to 30 years of experience ... certainly a highly skilled technician," he said. "I can't generate that in the United States Army, or can't generate the equivalent of it."

"I think we've got to cut the sys-tem down and move it faster than 10 years," he said. "How fast can we get to the future? Well, when I started briefing Force XXI (in 1994), we weren't even going to get a division design until 1999."

The DAWE at Fort Hood in November 1997 helped make a new division a reality before 2000. The same groups who participated in the spiral-development process were also involved with the DAWE, helping translate the experiment's results into the Army division for the 21st century.

Acronym Quick-scan

ACMO — Army Configuration Management Office
ASA – Army Signal Activity
ASC – Army Signal Command
AWE – advanced warfighting experiment
BRAC – base realignment and closure
C4I – command, control, communications, computers and intelligence
CIP – command inspection program
DAWE – division advanced warfighting experiment
DISA – Defense Information Systems Agency
ISC – Information Systems Command
MCS – manuever-control system
NTC – National Training Center
OPFOR – opposing force
QA – quality assurance
SATCOM – satellite communications
SCSS – single-channel satellite system
SOUTHCOM – (U.S.) Southern Command
TPCS — tactical personnel communication service
TTP – tactics, techniques and procedures
UAV – unmanned aerial vehicle